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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,875	12/30/2003	Ali-Reza Adl-Tabatabai	42P17252	8424
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INTEL CORPORATION c/o INTELLEVATE, LLC P.O. BOX 52050 MINNEAPOLIS, MN 55402			EXAMINER MITCHELL, JASON D	
			ART UNIT 2193	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/748,875

Applicant(s)

ADL-TABATABAI ET AL.

Examiner

Jason Mitchell

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

1. Claims 1-22 are pending in this application.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "204" has been used to designate both "PMU" and "EVENT BUFFER" (see Fig. 2 and corresponding description in par. [0028]).
3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 120A and 1226 (see par. [0096]) .
4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Fig. 12, 1222.
5. Corrected drawing sheets in compliance with 37 CFR 1.121(d) or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be

labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

6. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors (e.g. the above objections to the drawings). Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. **Claim 10 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement.** The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The limitations recited in Claim 10 appear to be related to Fig. 12 and the

corresponding disclosure in pars. [0094]-[0099]. This disclosure does not enable one of ordinary skill in the art to determine what the claimed "compression value" (apparently 32-bit value 1206) represents, how it was generated or how it would be related to the uncompressed event datum (apparently 64-bit Uncompressed Instruction address 1202). Broadly speaking it is unclear how a compress value could be based on an uncompressed event datum or why this would be used in place or in addition to the original uncompressed value (see e.g. Fig. 12 1228).



10. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 presents three 'if' conditions, two of which are the same (i.e. "if one or more of the one or more event data is determined not to be compressible" see lines 4 and 14) the two identical conditions result in distinct actions to be taken (i.e. creating an uncompressed event record and creating a hybrid event record). Accordingly one of ordinary skill in the art would not be reasonably apprised of the intended scope of the claim. It is the examiner's understanding that the first 'if' condition was intended to be directed to a situation where each of the one or more event data is determined not to be compressible. This understanding will be used in addressing the claim.

Claim Rejections - 35 USC § 101

11. 35 U.S.C. 101 reads as follows:

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Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

12. Claims 19-22 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

13. Claim 19 is not limited to statutory embodiments. In view of Applicant's disclosure, par. [0019] the claimed medium is not limited to statutory embodiments, instead being defined as including both statutory embodiments and non-statutory embodiments (e.g., "a machine-readable medium may, but is not required to comprise such a carrier wave"). As such, the claim is not limited to statutory subject matter and is therefore non-statutory.

14. Claims 20-22 do not correct the issues with parent claim 19 and thus are also rejected.

Claim Rejections - 35 USC § 102

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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16. Claims 1-5, 8, 11-14 and 19-22 are rejected under 35 U.S.C. 102(e) as being anticipated by US 6,912,675 to Swoboda (Swoboda).

17. Claim 1: Swoboda discloses a method comprising:

reading one or more event data, the one or more event data corresponding to an event monitored from a system (col. 7, lines 6-20 "four different classes of trace data");

for each event datum, compressing the event datum if the event datum is determined to be compressible (col. 15, lines 28-49 "If any compression is applicable ... applies such compression to the new data");

creating a processed event record, the processed event record conforming to a record format (col. 15, lines 28-49 "outputs the compressed data to a packet builder");
and

storing the one or more event data in the processed event record in accordance with the record format (col. 15, lines 28-49 "inserts the compressed data into appropriate packets").

18. Claim 2: Swoboda further discloses (e.g. col. 15, lines 28-49) when each of the event data are not compressible Swoboda's created packet will contain only uncompressed data thus anticipating the claimed uncompressed event record, (col. 15, lines 28-49 "if no data compression is applicable passes the new data in its original, uncompressed form to the packet builder"); when each of the event data are compressible Swoboda's created packet will contain only compressed data thus

anticipating the claimed compressed event record (see the rejection of claim 1); and when the event data are both compressible and not-compressible Swoboda's created packet will anticipate the claimed hybrid event record.

19. **Claim 3:** Swoboda further discloses said compressing each event datum comprises characteristics-based compression (col. 16, lines 3-6 " the compression determiner ... use either the sing extension technique or the compression map technique").

20. **Claim 4:** Swoboda further discloses the characteristics-based compression comprises using a selected one of one or more compression algorithms to compress the event datum, wherein the selected compression algorithm compresses the event datum in accordance with one or more characteristics of the event datum (col. 16, lines 3-6 " the compression determiner ... use either the sing extension technique or the compression map technique").

21. **Claim 5:** Swoboda further discloses setting the one or more compression algorithms (col. 42-46 "the compression determiner 125 can be selectively controlled").

22. **Claim 8:** Swoboda discloses a method comprising:
reading one or more processed event records from an event buffer, each processed event record including one or more processed event data corresponding to

one or more uncompressed event data (col. 17, lines 39-43 "the trace export portion includes a FIFO buffer"); and

generating one or more client uncompressed event data corresponding to the one or more uncompressed event data (col. 8, lines 40-53 "Trace displays are automatically correlated to the source code that generated the trace log"), said generating one or more client uncompressed event data including one of:

decompressing an event datum if the event datum is in a compressed format; and

outputting an event datum if the event datum is not in a compressed format.

23. Those of ordinary skill in the art would have recognized the necessity of uncompressing compressed data in order to present it in the disclosed debug interface (see e.g. col. 8, lines 40-53).

24. **Claims 11-14** recite limitations addressed in the rejection of claims 1 and 3-5 wherein the limitations are implemented in circuitry (see Swoboda col. 4, lines 13-15 "The on-chip debug component of the present invention").

25. **Claims 19-22** recite limitations addressed in the rejection of claims 1 and 3-5.

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26. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

27. **Claims 6-7 and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,912,675 to Swoboda (Swoboda) in view of US 6,624,762 to End (End).**

28. **Claim 6:** Swoboda does not explicitly disclose a compression algorithm generating a hash value to be mapped to a dictionary index.

29. End discloses a data compression algorithm comprising generating a hash value mapping the hash value to a dictionary index and outputting the dictionary index (see e.g. Fig. 3 and the corresponding description starting at col. 6, line 48).

30. It would have been obvious to one of ordinary skill in the art at the time the invention was made to replace or augment Swoboda's compression algorithms (see e.g. Col. 16, lines 3-6) with End's compression algorithm (see e.g. Fig. 3) as a known and obvious alternative method of providing the required functionality (i.e. data compression). This combination would produce only the known and expected benefits associated with the individual compression algorithms.

31. **Claim 7:** Swoboda further discloses if the dictionary entry does not correspond to the given event datum, then outputting the given event datum (col. 15, lines 28-49 "if no data compression is applicable passes the new data in its original, uncompressed form to the packet builder").

32. **Claim 9:** The Swoboda-End combination discussed in the rejection of claim 6 would require in the claimed decompression steps to present the trace data in Swoboda's debug interface (e.g. col. 8, lines 40-53).

33. **Claim 10:** End further discloses generating a hash value from a compression value, mapping the hash value to a dictionary and replacing a dictionary entry with the compression value. (see e.g. Fig. 3 and the corresponding description starting at col. 6, line 48).

34. **Claims 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,912,675 to Swoboda (Swoboda) in view of US 7,254,810 to Barsness et al. (Barsness).**

35. **Claims 15-18** recite limitations addressed in the rejection of claims 11-14 with the addition of a compiler to read the processed event record.

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36. Swoboda does not explicitly disclose a compiler reading the processed event record.

37. Barsness teaches a compiler for reading event records (col. 3, lines 4-8 "collecting a run-time trace ... an optimizing compiler ... may use the collected profile data to make optimizations to the computer program").

38. It would have been obvious to one of ordinary skill in the art at the time the invention was made to present Swoboda's trace data (col. 7, lines 6-20 "four different classes of trace data") to an optimizing compiler as taught by Barsness (col. 3, lines 4-8) in order to optimize the application (col. 3, lines 4-8 "make optimizations to the computer program").

Conclusion

39. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Mitchell whose telephone number is (571) 272-3728. The examiner can normally be reached on Monday-Thursday and alternate Fridays 7:30-5:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jason Mitchell/
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9/12/07


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